# User Guide for an Electrical Socket with Temperature Monitoring via Internet V 3.2.0(.x)

**Please note:**

**Before commissioning read the instruction manual very carefully!**

**24th July 2013**

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# 1 User Guide

## 1.1 Overview

Figure 1: Multiple Socket Outlet

**1** Main on/off switch
**2-4** Sockets 1,2,3
**5** Adapter Power Cable
**6** Adapter LAN cable, temperature sensor, RESET button

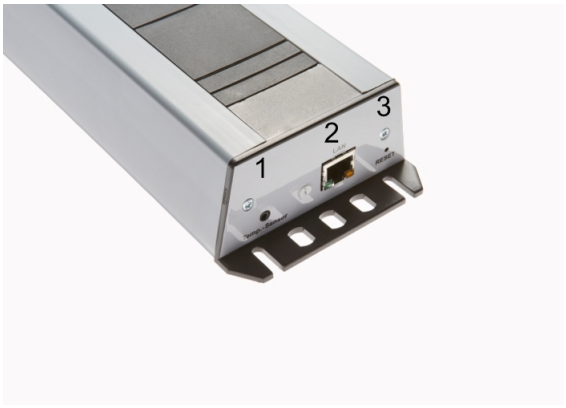


Figure 2: Head side without connecting cable

Figure 3: Head side with connecting cable

**1** Adapter temperature sensor
**2** Adapter LAN Cable
**3** RESET button

## 1.2 Commissioning

Connect the socket board via LAN-wire with the router. Plug the power plug in the socket. Turn on the socket using the green switch on the front side. [1]

### 1.2.1 Activate DHCP in the router

Wait 30 second until you start a web browser, for example Mozilla Firefox. Enter the hostname of your electrical socket. The preset hostname is named "websteckdose". By entering **websteckdose** you reach the home page of the electrical socket (tested with FritzBox).
If you have no success with this installation, login to your router and find out the IP address that was assigned to the LAN adapter of your electrical socket. Enter the IP address determined in the form xx.xx.xx.xx in the address bar of your browser. This will take you to the home page of the electrical socket.

### 1.2.2 Deactivate DHCP in the router

In order to create a connection with the socket, you need to change the settings on your computer according to the following information:

- IP address: 192.168.101.x -> x = any except 6
- IP subnet mask: 255.255.255.0
- Gateway: 192.168.101.254

**ATTENTION!** *Note on your computer the previous settings, before you change them, as they are important for your internet access. After the commissioning of the socket board you need to recover these settings!*

Type the IP address 192.168.101.6 into your web browser. You are now at the front page of the homepage.

[1] For control purposes the electrical outlet number 2 will turn on for a short moment until it will switch back to the set position.

### 1.2.3 Home Page of the Electrical Socket

On the front page you receive all the important information, such as the current temperature, chosen profile, the latest switching status of the socket, as well as the temperature profile of the last 24 hours. With every restart the temperature profile will start from the beginning again. During operation, the homepage is updated every 10 seconds

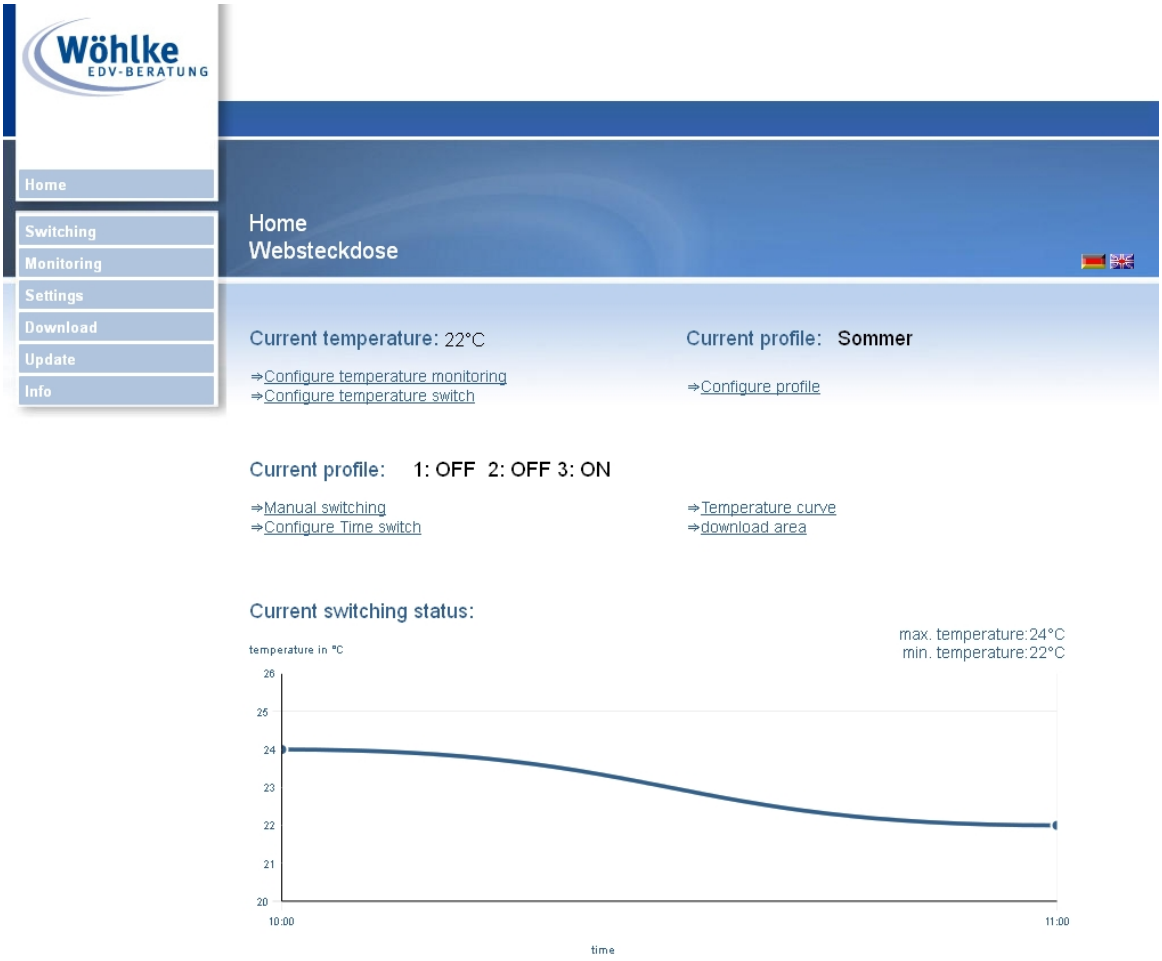


Figure 4: Home Page of the Electrical Socket

When you put the web-electrical-socket into service for the first time, please choose the menu item *Settings* and configure the web-electrical-socket. For the actual switching procedures and temperature monitoring you find the menu items left in the navigation box or respectively as a navigation point on the front page. By clicking on this menu item *Home*, you return to this page at any time.

## 1.3 Settings

In order to adjust the individual settings to the socket board, choose the menu item *Settings* on the homepage.

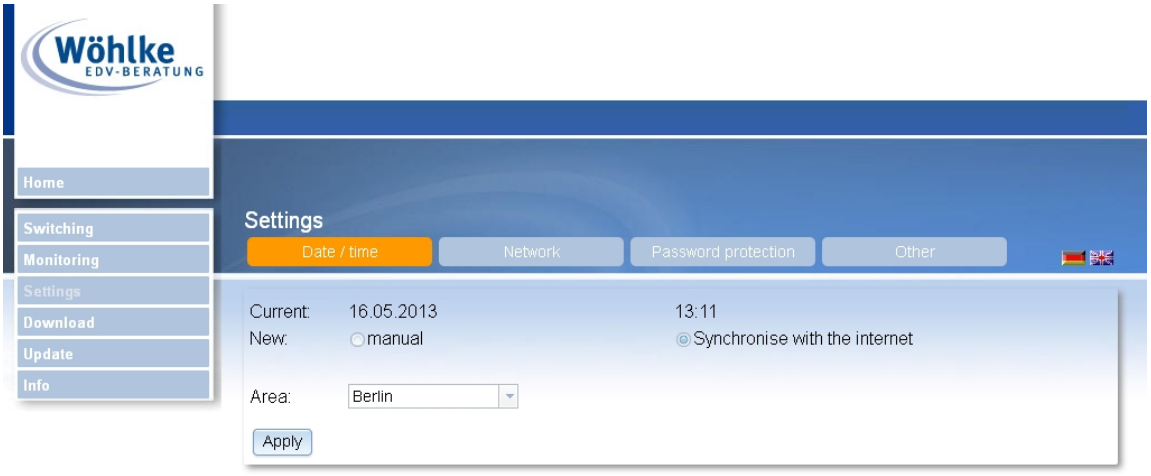


Figure 5: Settings of the socket board

On this page, the settings below can be made. Confirm your entries in the corresponding sections always by *Apply*, otherwise changes will not be accepted.

- Date and time
- On-position of the socket board and labeling
- Network connection LAN and / or WLAN
- Hostname
- Password protection for the homepage
- Webserver HTTP-Port
- Priority for simultaneous operation of timer and termperature switching
- Reboot the system
- Used temperature sensor

### 1.3.1 Date and Time

Below the menu item *Settings -> Date/Time* you have the possibility to set date and time. You can also state, whether you would like to synchronize the data with the internet. Online synchronization will always start at 12:00 am.
In order to adjust date and time, please choose the desired values and confirm your entry by *Apply*.

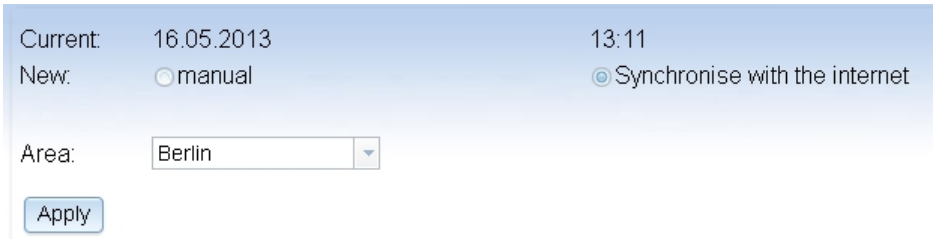


Figure 6: Adjust date and time

### 1.3.2 On-position and Labeling

Below the menue item *Settings -> Other* you can specify a base state.

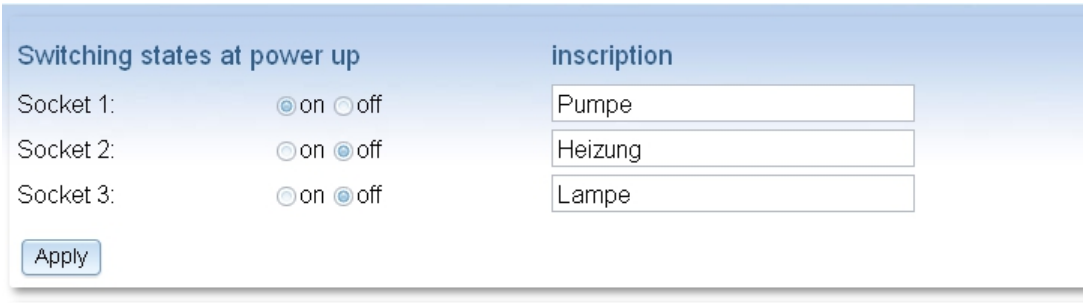


Figure 7: Set the on-position

This state will be adopted by the socket after the socket board was connected to the electricity grid or has been turned on, or alternatively after a blackout.
Choose the desired state for every socket board. You can also enter a label for every single socket board. Confirm your entry with *Apply*.

### 1.3.3 On-position and Labeling

Below the menue item *Settings -> Other* you can specify a base state, when the temperature sensor fails or is removed.

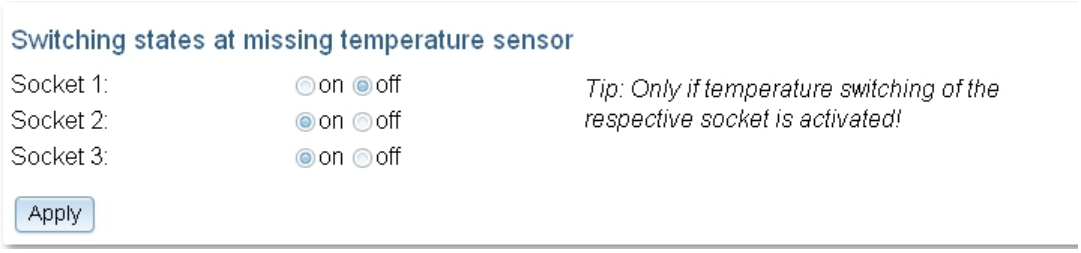


Figure 8: Set the on-position

The sockets go into these defined state when running during the operation and the temperature sensor fails or is removed and the temperature switching is activated for the respective socket regardless of the programmed switching states.

### 1.3.4 Network Settings

Below the menue item *Settings -> Network* you configure the socket board individually for your network. By clicking on the box before LAN or WLAN you chose, how your electrical socket shall connect with the network. Both ways can operate parallel. Confirm your settings always with *Apply*.

**LAN-Configuration** Please decide first of all, whether you want to use the connection via DHCP or a LAN adapter with a fixed IP address. If your router is set on DHCP, the IP address can be assigned automatically. By entering the hostname into your browser, you connect with your Electrical Socket (tested with FritzBox). The other way to connect is by using the IP address the router has allocated to the LAN adapter.
If your DHCP has not been set or you want to have a fixed IP address for the LAN adapter, fill out the box *IP-Address, Netmask, Gateway* and *DNS*. In the box *Gateway* enter your routers IP address, in the box *Netmask* enter the netmask (subnetmask).
In the box *IP-address* please enter the IP address, that the LAN-adapter of your Electrical Socket shall get. If your netmask is called 255.255.255.0 the first three fields of the IP address need to correspond with those from your gateway. The last

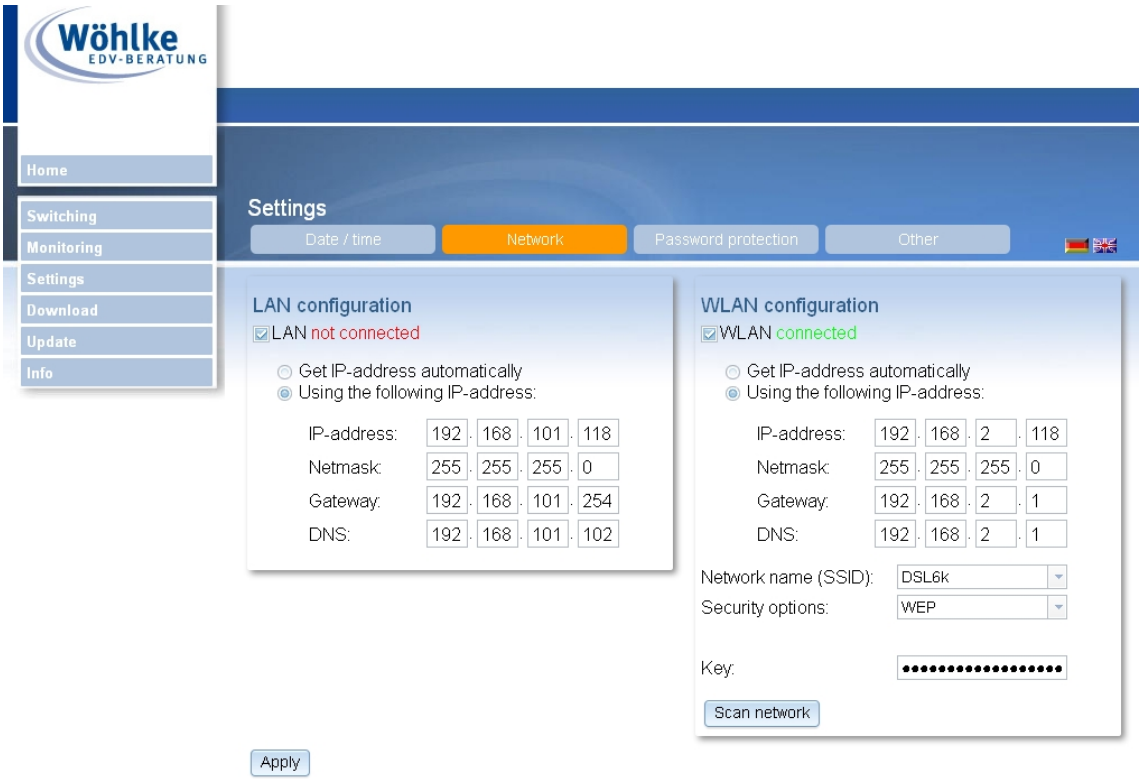


Figure 9: Network settings

field is decided by the individual address. Please make sure, that no other device that is connected to this network is being used.
In field *DNS* you generally enter the IP address of your router, but you can also enter an alternative DNS server.

**WLAN-Confirguration** Up to the field *Network name (SSID)* you can precede the same as in the LAN configuration.
When you have already configurated the LAN settings, assign a individual IP address for the WLAN adapter.
Then enter the network name (SSID), which is set on your router for WLAN. Spaces in the network name are not supported, so please remove possible spaces from your SSID.
By clicking on the button *Scan network* all picked up networks will be shown. Choose the right network. Preset security options, WPA mode and encryption key. These settings need to correspond with the router's security settings. Your WLAN-password can not contain special characters.

**Network settings check** If you have changed the IP address of your computer during the first settings, restore the original settings. Test your computer by checking if it can connect with the internet.
In order to get to the homepage of the socket board, enter your selected hostname into your browser (tested with FritzBox and DHCP), or use the individuell IP address of your electrical socket. Via this entry every computer that uses the same network can access to the homepage of the socket board.

If you cannot connect with the Electrical Socket, check the settings and start maybe again with the first settings.

### 1.3.5 Hostname and Webserver

You need an individual hostname if you let DHCP automatically assign an IP address. The preset hostname is "websteckdose". In this case you can connect with your Electrical Socket by entering the hostname into your browser (tested with FritzBox).
With the item point *Webserver*, you can set an alternative HTTP port. By default, port 80 is set. If necessary, enter an alternate port and confirm your choice with *apply*. In this case, enter the alternative port address always with a colon when you want to achieve the electrical socket. Examples:

192.168.101.6:65000
websteckdose:65000
http://Steckdose-2006.dyndns.org:65000

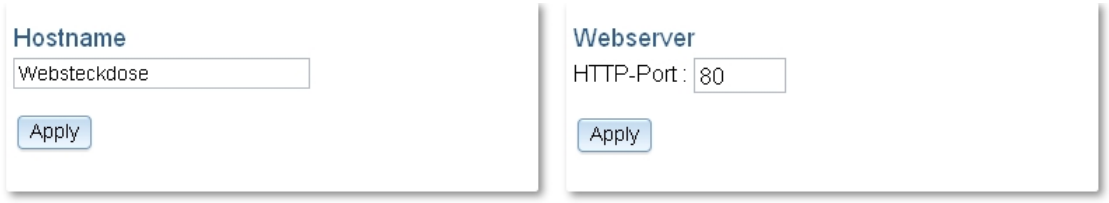


Figure 10: Hostname and Webserver

### 1.3.6 Password Protection

Below the menue item *Settings -> Password Protection* you have the possibility to protect the access of your homepage with a password. Fill in the fields and confirm

your entry with *Apply*.

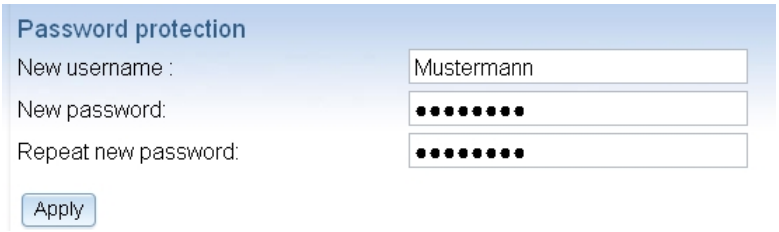


Figure 11: Create a password

### 1.3.7 Further Settings

Below the menue item *Settings -> Other* you will find further settings.
Under *Temperature Sensor* you can chose between three types of sensors (3m / 10m / 20m).
Below the point *Reboot* you can restart the system, which should not be mistaken with Reset (chapter 1.11), which sets the settings back to factory settings.
In the area *Service* you can simulate the software e.g. to a previous state, if an update was not successful. Give "'software"' in the box under *Service* and press *Apply*. This allows you to re-run an update.
Below *Time Switch and Termperature Switching* you can define the default priority. This setting is relevant when Time Switch while Temperature Switching is used.

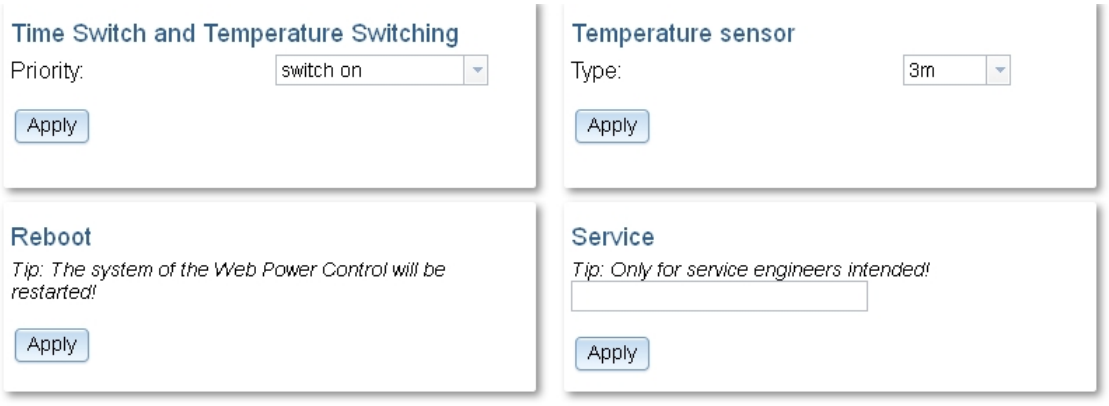


Figure 12: Further Settings

Possible application by using time temperature switching and time switch at the

same time: The socket switches at different temperatures. Determined by the timer, the socket should also remain switched on or off in a given period.
Priority: *switch on*
The selected socket is switched on when timer or temperature switch are on, and off when both turn off.
Priority: *switch off*
The selected socket is switched off when timer or temperature switch are off, and on when both turn on.

Default is *switch on*. Select the switch priority and confirm your entry by *Apply*.

## 1.4 Switching

### 1.4.1 Manual Switching

Select the menu item *Switching -> Manual Switching* on the homepage. The following page will appear:

Figure 13: Manual switching

The current state of the socket is shown in the socket picture. Using the button, which is located below the socket picture, the individual sockets can be turned on or off.

### 1.4.2 Time Switch

The function of a time switch enables you to determine the times at which your socket turns on or off. For every individual socket a single, daily or weekly point in time can be defined, at which it shall turn on or off. These settings will be saved in your profile and you can create up to four profiles.
Select the menu item *Switching -> Time switch* on the homepage. It appears on the following page:

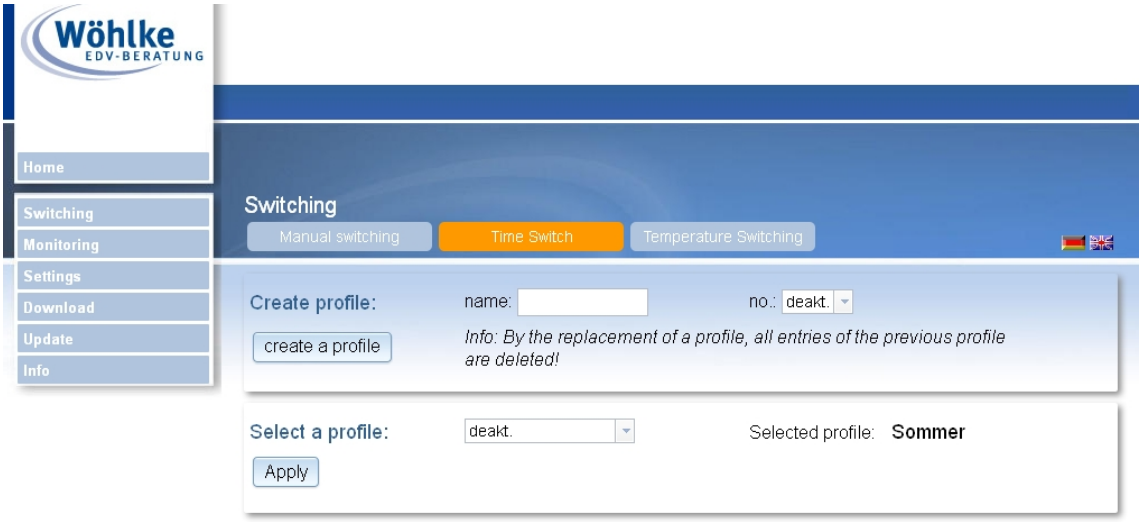


Figure 14: Choice and creation of a profile

At least one profile needs to be created and afterwards at least one profile needs to be chosen. After the profile is chosen and you pressed *Apply*, the following page appears:

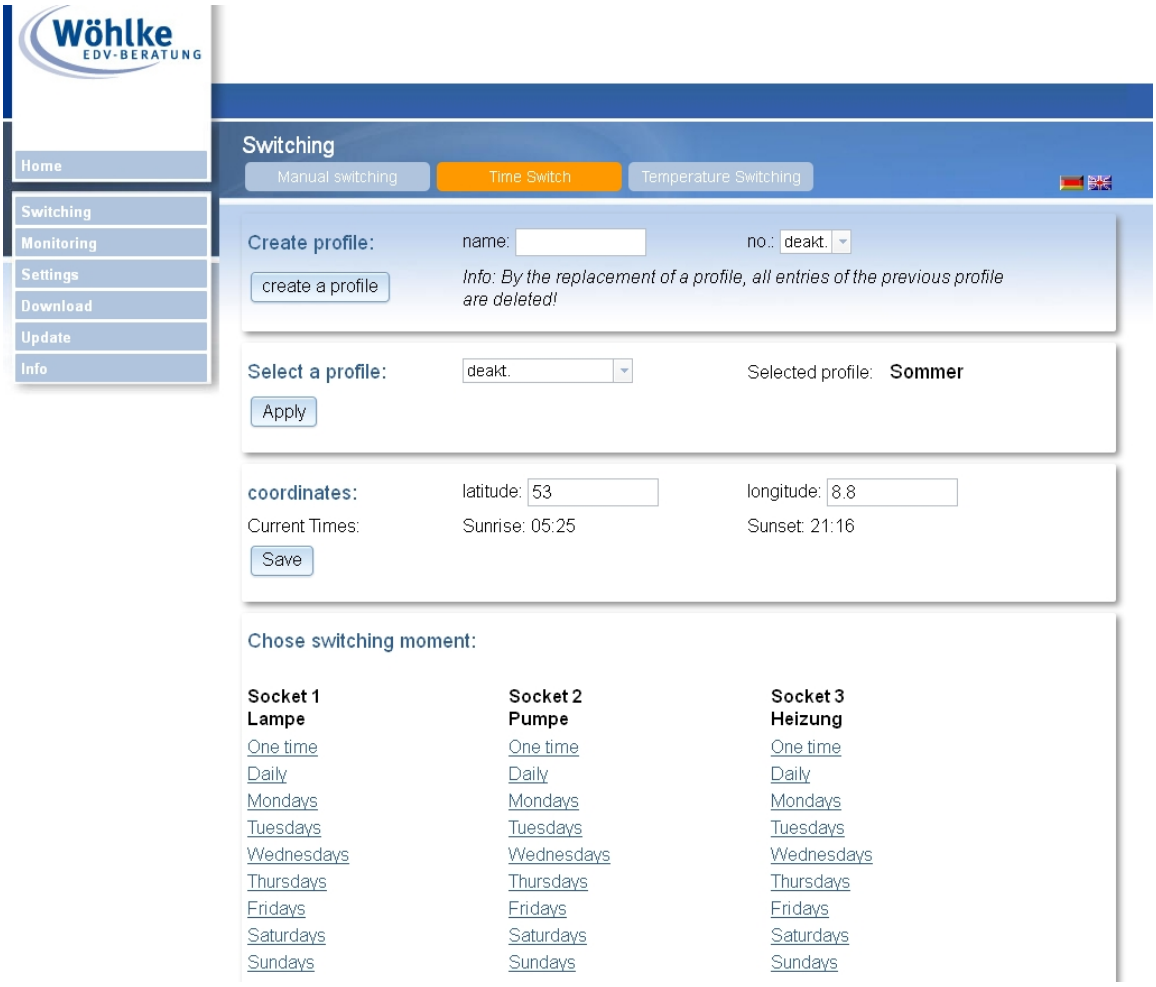


Figure 15: Selection of a time switch

Now you can choose which socket should be turned off.

Example: Socket 2: Single switching

Choose below the point *Time switch -> Socket 2 -> One time.*
The following page will appear:

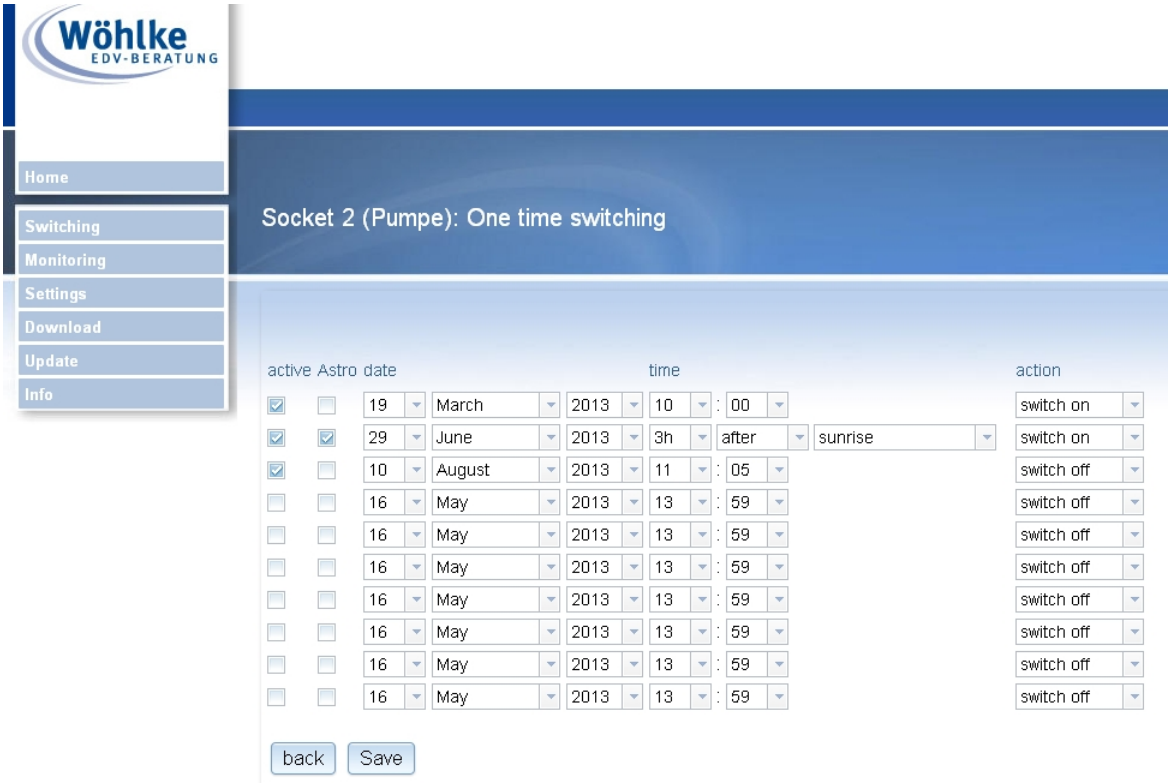
Wöhlke
EDV-BERATUNG
Home
Switching
Monitoring
Settings
Download
Update
Info
Socket 2 (Pumpe): One time switching
active Astro date time action
19 March 2013 10 00 switch on
29 June 2013 3h after sunrise switch on
10 August 2013 11 05 switch off
16 May 2013 13 59 switch off
16 May 2013 13 59 switch off
16 May 2013 13 59 switch off
16 May 2013 13 59 switch off
16 May 2013 13 59 switch off
16 May 2013 13 59 switch off
16 May 2013 13 59 switch off
back
Save

Figure 16: Setting of onetime switching actions

First of all you select the checkbox below the point *active* in the line, in which you want to change settings. Choose a date, time and switching action in this line, or select *Astro* to switch the sockets depending on the sunrise or sunset. You have the possibility to determine ten *onetime* moments at which the socket shall be switched. Confirm your entry with *Save*. The data that were entered by you will be arranged chronologically. When you want to delete a switching action, remove the checkmark at the beginning of the respective line and click *Save*.
Attention: In case of a blackout or any other incident that prevents the Electrical Socket from switching, there will be an entry error_log data. This function is only active during single switching.

Example: Socket 3: daily switching

Choose below the point *Time switch -> Socket 3 -> Daily.*
The following page will appear:

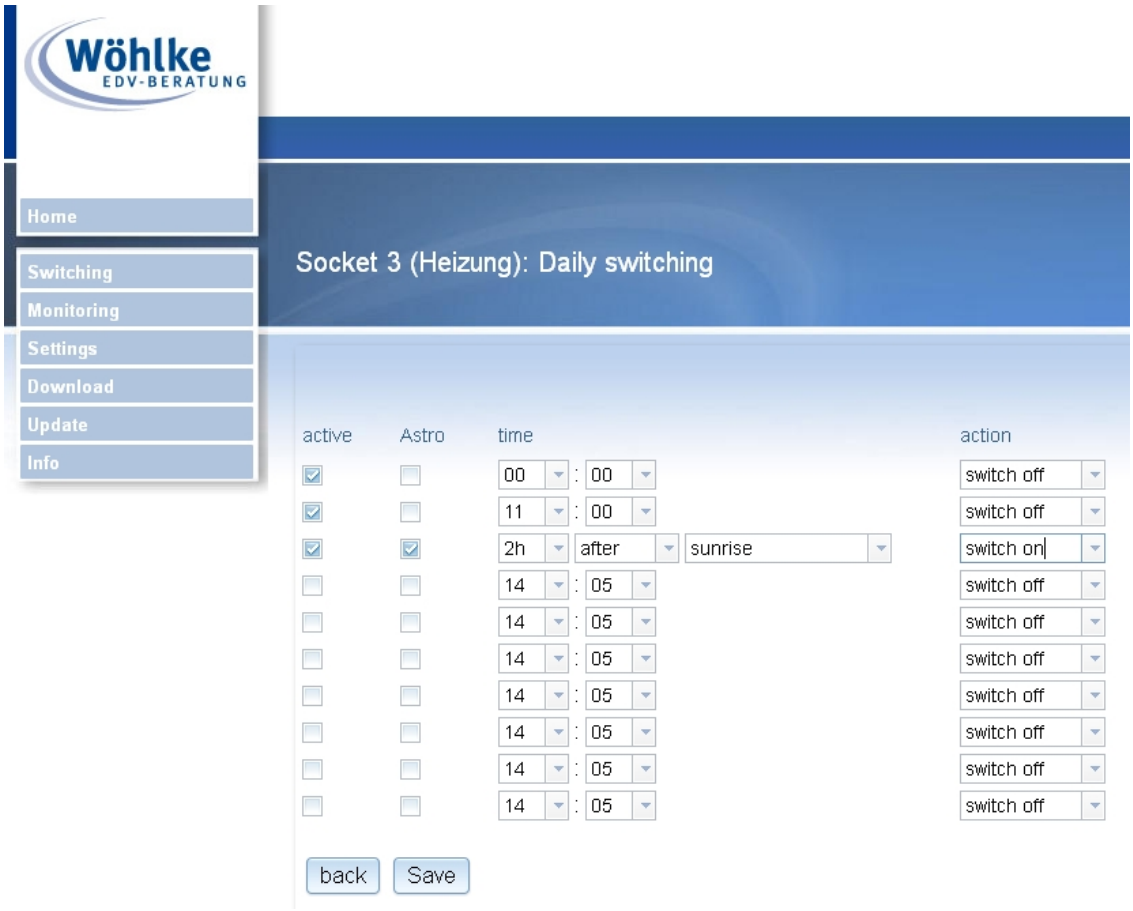


Figure 17: The setting of daily switching actions

First of all you click on the checkbox below the point *active* in the line, in which you want to change settings. Then choose the time or select *Astro* to switch the sockets depending on the sunrise or sunset. Determined the type of switching. You have the possibilities to determine ten points in time at which the socket shall be switched daily. Confirm your entry with *Save*. The data that were entered by you will be arranged chronologically. When you want to delete a switching action, remove the checkmark at the beginning of the respective line and click *Save*. The settings for particular weekdays take place in the same way as the settings for daily switching. All settings will be implemented parallel. If a socket shall be turned on and off at the same time, then the switching-off-process has priority.

Via *Time switch -> Display error_log* you can display which *onetime* switching actions, for example because of a blackout, could not be conducted. This data can be deleted by the button *delete error_log*.

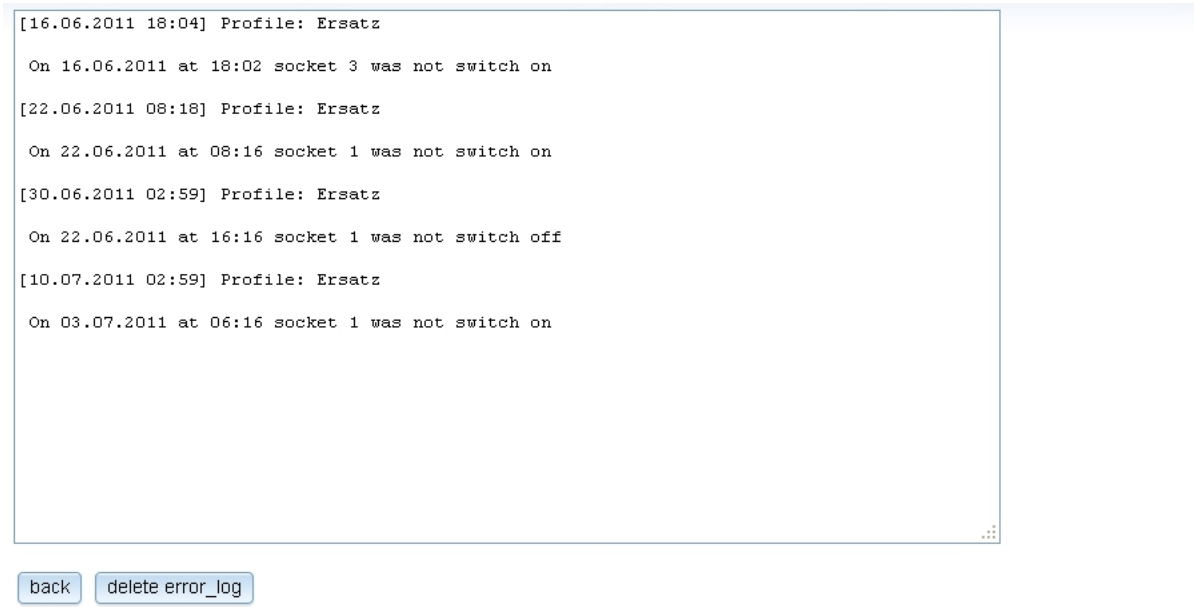
[16.06.2011 18:04] Profile: Ersatz
On 16.06.2011 at 18:02 socket 3 was not switch on
[22.06.2011 08:18] Profile: Ersatz
On 22.06.2011 at 08:16 socket 1 was not switch on
[30.06.2011 02:59] Profile: Ersatz
On 22.06.2011 at 16:16 socket 1 was not switch off
[10.07.2011 02:59] Profile: Ersatz
On 03.07.2011 at 06:16 socket 1 was not switch on
back
delete error_log

Figure 18: Display error_log

### 1.4.3 Temperature Switching

Temperature switching provides you the possibility to switch a socket, depending on the ambient temperature. Select on the homepage *Switching -> Temperature switching*. The following page will appear:

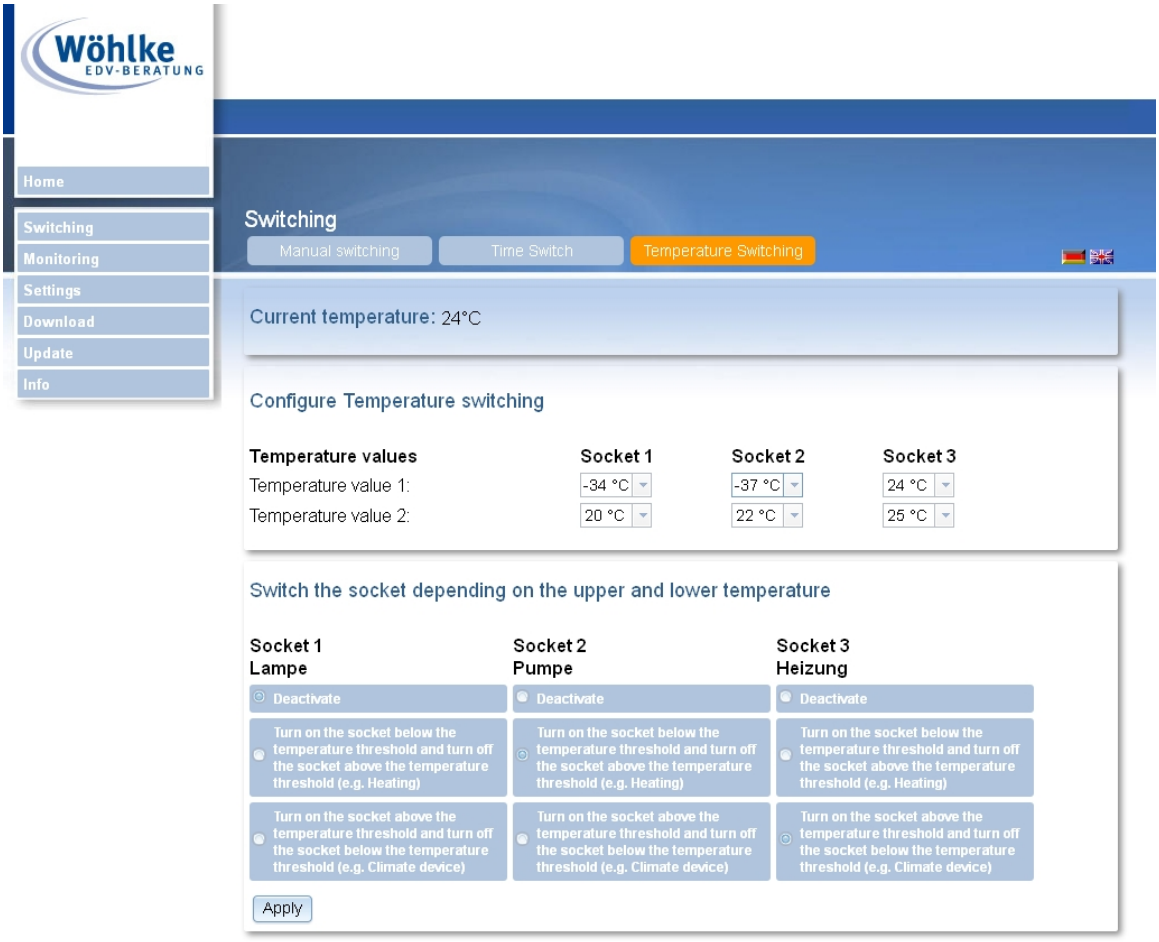


Figure 19: Temperature-dependent switching

The current temperature will be shown. You also have the possibility here to enter two temperature threshold for a switching action of the socket. Further down you can select how the particular socket shall switch.
If you want the socket to turn on below the temperature threshold and to turn off above the temperature threshold, you should select choice number two. If you want the socket to turn on above the temperature threshold and to turn off below the temperature threshold, choose option number three. If the socket shall not switch depending on the ambient temperature, select option number one *deactivate*. In order to apply the settings confirm with *Apply*.

An example:
A profile is created and you have set socket no.1 and no.2 in a way that they turn on at 8:00 and turn off at 22:00 every day. Now you decide that a temperature sensor should be connected to socket no.3 and that this socket should always turn on above 30°C and turn off below 20°C. Time switch for no.3 is inactiv. So switch off all switching times for the third socket. Now click on the menu item *Temperature switching* and enter temperature value 1: 20°C and temperature value 2: 30°C. Finally, you activate option number three for socket no.3 and then confirm your entry with *Apply*.
Socket no.1 and no.2 continue to turn on at 8:00 and turn off at 22:00, but socket no.3 only turns on, if the ambient temperature of 30°C exceeds and turns off, if the ambient temperature comes below 20°C.

Combination of time switch and temperature switching is also possible, when a profile is selected for the timer. The switching state has priority which is set under *Settings -> Time Switch & Temperature Switching -> Priority*.

1. Priority: *switch on*
Keep the power on or switching on has higher priority. Temperature switching or timer will switch on the socket. The socket will remain on as long as temperature switching **and** timer will switch off.
Application: The socket should switch depending on the temperature. Regardless, it is switched **on** during a certain period determined by the timer.
2. Priority: *switch off*
Keep the power off or switching off has higher priority. Temperature switching or timer will switch off the socket. The socket will remain off as long as temperature switching **and** timer will switch on.
Application: The socket should switch depending on the temperature. Regardless, it is switched **off** during a certain period determined by the timer.

## 1.5 Monitoring

### 1.5.1 Temperature curve

The function *Monitoring -> Temperature curve* shows the temperature history of the last 24 hours. Optionally, you can also view the progress of the last 7 days or 28 days.
You have also the possibility to download the hourly temperature values in a CSV file up to 365 days.

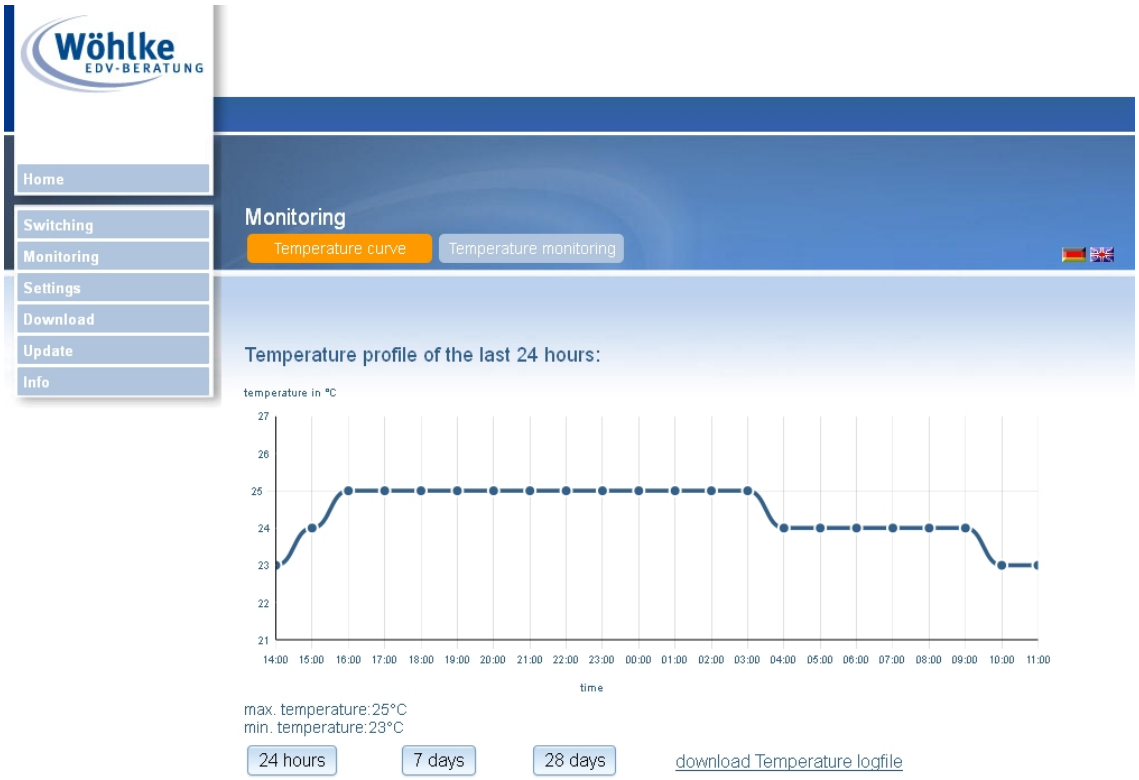


Figure 20: Temperature curve over 24 hours

### 1.5.2 Temperature Monitoring

Connect the supplied temperature sensor with the front side of the socket. Choose on the homepage the menu item *Monitoring -> Temperature monitoring*. The following page will appear:

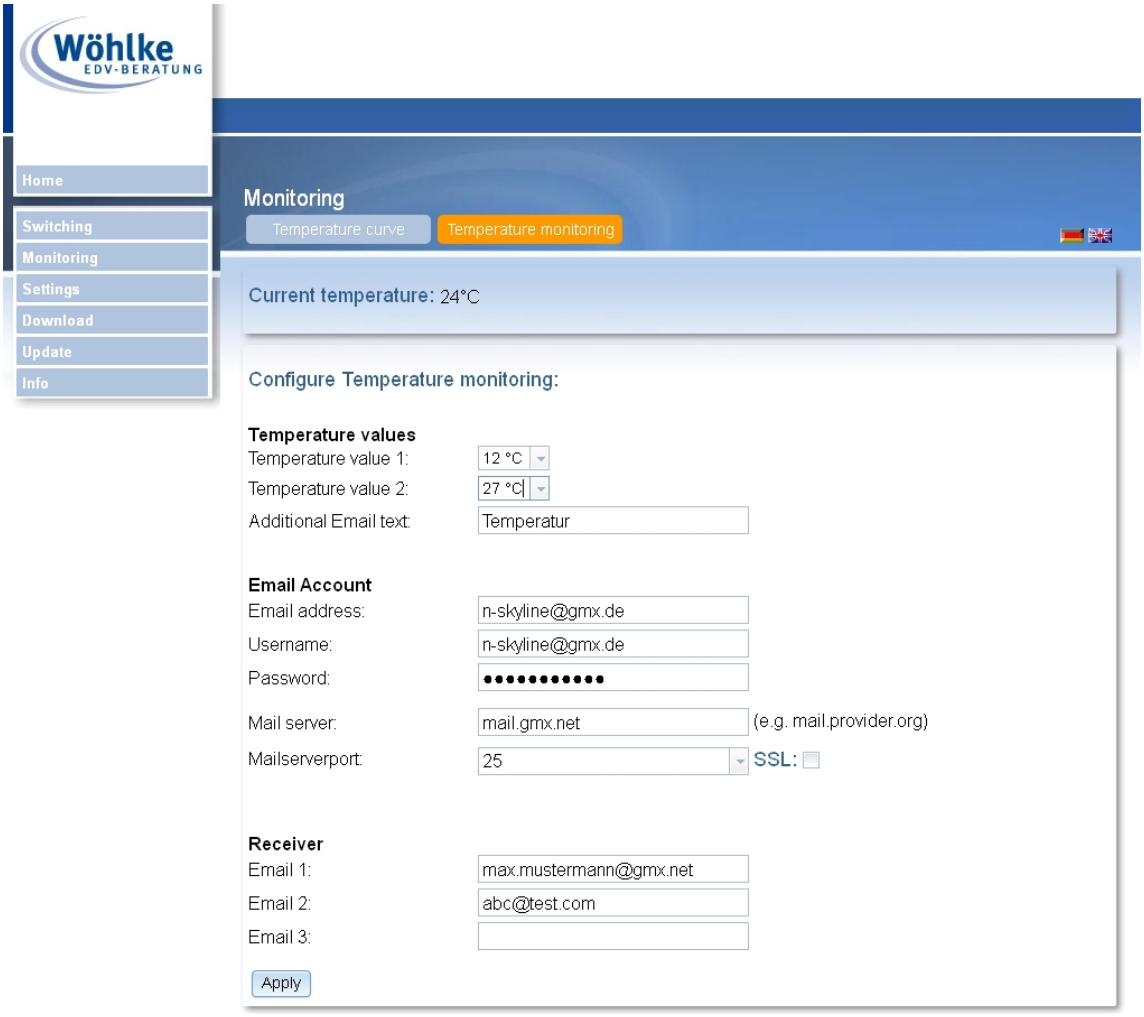


Figure 21: Temperature indicator and settings

The current temperature will be shown on the socket board (at the temperature sensor). The temperature range of the sensor lies between -40°C and +100°C.
On the homepage you have the possibility to enter one or two temperature thresholds. If you do not want to enter any thresholds, please select in the appropriate field *deactivate*. In the following fields you can enter information about your email account and three email addresses. If the entered threshold is exceeded or deceeded, an email is send to every email address with information about date and time.

Confirm your entry with *Apply*. Consequently, a test-email is sent to the entered email addresses.
If temperature monitoring is activ, you will get an e-mail every time you restart the electrical socket.

## 1.6 Download

The Electrical socket logs all switching operations and e-mail dispatches in log files that can be read with this function.

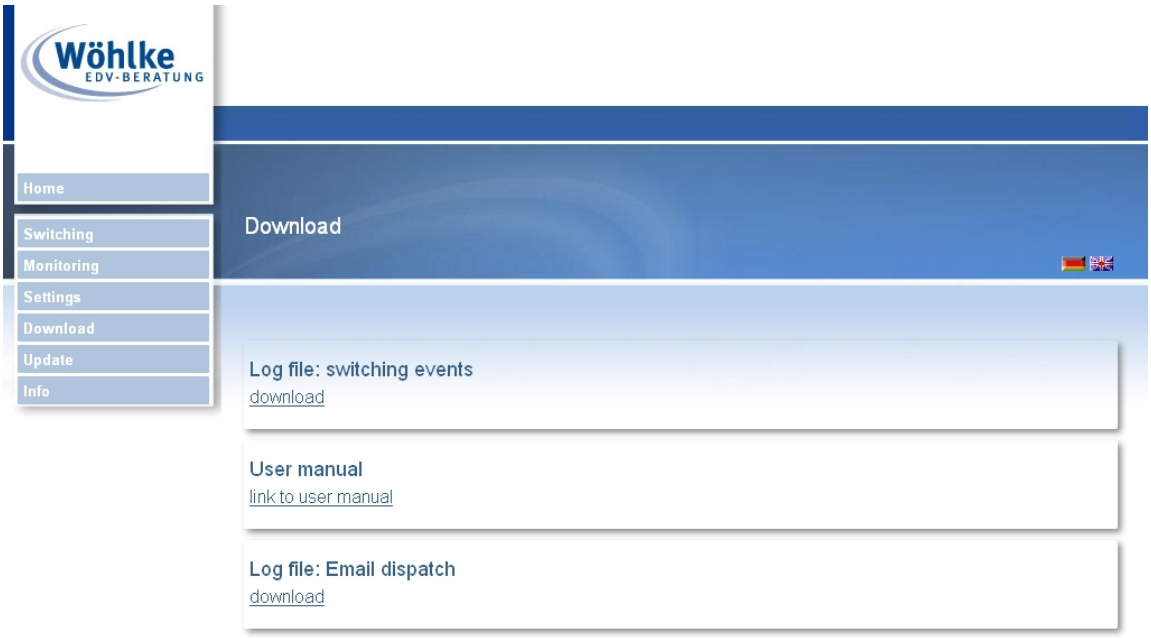


Figure 22: Download log file

To view these files click with the left mouse button on the link *download*.
The recent shifts are displayed with time and cause of the circuit (manual, timer or temperature switching). On temperature switching you can also see the current termperature at shifting time. The log file for switching operations is limited to 1000 entries, and when an overflow occurs, the oldest entries are deleted first.
In the e-mail logfile date, time and number of the registered e-mail address (1,2 or 3) is displayed and the status OK or ERROR.
To save the files on your computer, click the link *download* with the right mouse button. Choose from the following selection to the point *Save file as ....* Give a destination and confirm with *Save*. The saved files are text files that can be edited with a simple text editor.
Also you find a link to download the usermanual.

## 1.7 Update

The Electrical Socket is equipped with an automatic update function, which makes it possible, if required, to search for updates of the software automatically.

Figure 23: Update function

When you click on the button *Run update*, updates will be downloaded and installed automatically. Upon successful update, a status message appears, just as if your software is up to date.

## 1.8 Information

Figure 24: Information

On the information page on the website you can find contact information from the company Wilfried Wöhlke EDV-Beratung GmbH, including telephone number, fax number, email address. On that site you can also find the newest software and hardware versions, as well as MAC- and IP-addresses for LAN and WLAN adapters. The date of the last time synchronization can also be checked. Your see, wether the electrical socket in on- or offline.

## 1.9 Network settings and Password resetting

The socket board is equipped with a reset-key. In case you forget the IP address of your socket and/or your password for the homepage, you can reset the socket with the reset-key back to factory settings. Hereto you have to hold the reset-key for at least 3 seconds. The reset-key is located on the right, next to the LAN-connector and needs to be pressed by a thin object (for example a paperclip).
After reset the following values are set for the socket:

- IP address LAN: 192.168.101.6 (if there is not DHCP)
- IP address WLAN: 192.168.101.7 (not activ)
- Net mask: 255.255.255.0
- Gateway: 192.168.101.254
- DNS: 192.168.101.254
- Connection via: LAN
- DHCP LAN adapter: on
- Hostname: websteckdose
- Username: non
- Password: non
- Webserver HTTP Port: 80

The settings you have created for the time switch, temperature monitoring, and temperature switching, are saved despite the reset.
If you push the rest button longer than 15 seconds, all individual settings in time switching, temperature monitoring and temperature switching will be deleted and set back to factory settings.
A reset differs from a reboot to the effect that resetting, as described, restores it to the factory settings, and a reboot only restarts the system.

## 1.10 Create a Domain via Dyndns.com

In order to connect to the socket via the internet, the socket needs to be connected to an online router. In addition the IP address of the router needs to be known and the IP address can be assigned automatically and has to be fixed. If a fixed IP address is not assigned to the router by the internet provider, the IP address of the router will be changed every 24 hours.
The service provided by DynDNS can assign a quasi-steadily IP address to the router. Thereby it is made possible to connect to the web-electrical-socket via a domain that was selected by DynDNS. Moreover, the IP address of the web-electrical-socket cannot be obtained automatically, but has to be assigned consistently. In order to obtain a domain, proceed as follows:
Enter in your browser the address *www.dyndns.com*. Select on the homepage the menu item *Sign In* and afterwards select the menu item *Create an Account*.

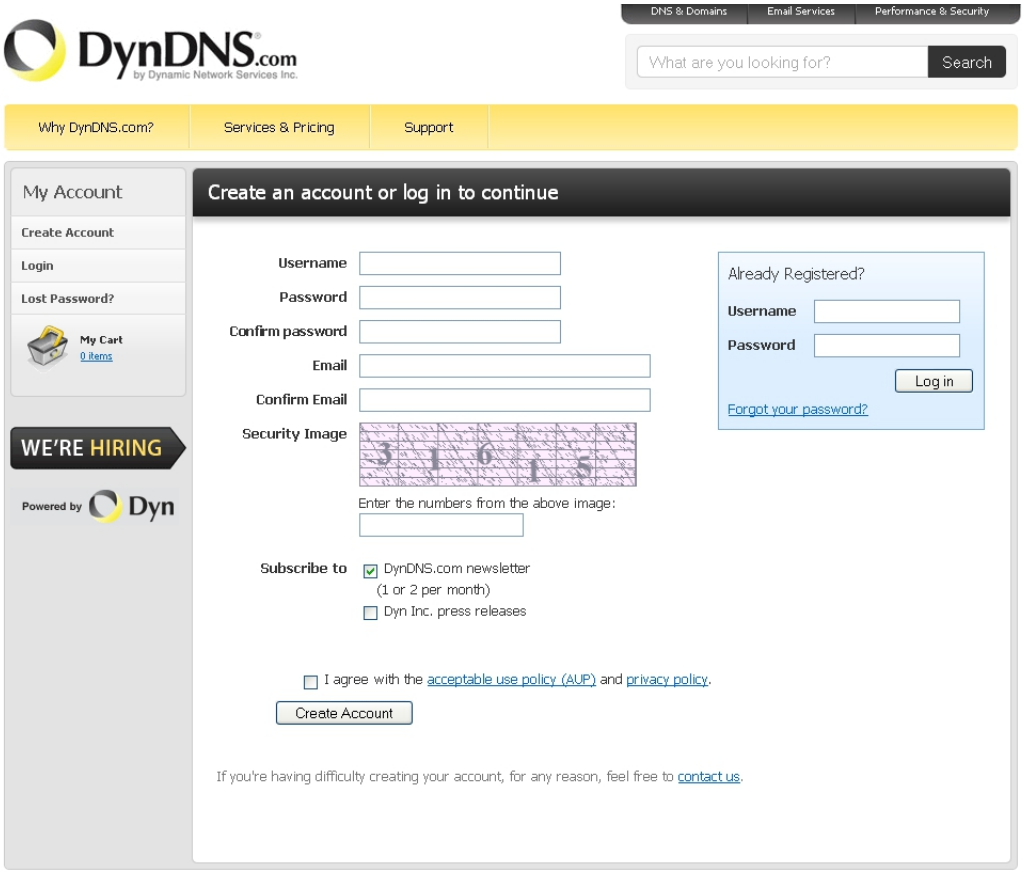


Figure 25: Form Create Account by DynDns.com

Fill out the displayed form. Confirm your entry with *Create Account*. The email address, that you have entered, can only be used once. If there is a problem during the account creation and you try to create an account again, you have to use an alternativ email address. Afterwards you will receive an email to the email address, which you have stated in the form. Follow the link in the email and log in with your chosen username and password on DynDNS.
Now select on by one the menu items *My Services -> Add Hostname*. Fill out the shown form.

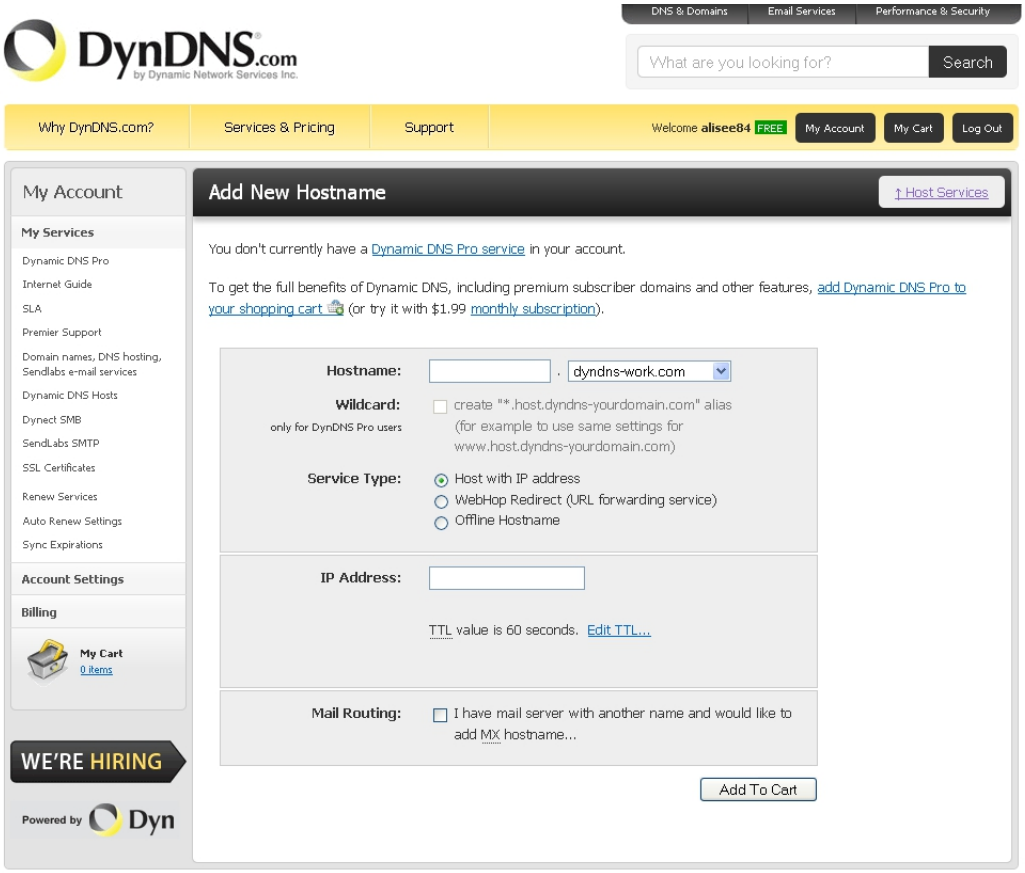


Figure 26: Create a host on DynDNS

Enter in *Hostname* your individually selected domain name and select a domain ending, so that you domains name is, for example, Steckdose2006.dyndns.org. In the field *IP-Adresse* your router's IP address will be shown. Confirm your entry with *Add Host*. Now you have registered successively on dyndns.com.
DDNS must now be enabled on your router. In this case select dyndns.org as your provider. All access and domain name from dyndns.org must also be entered in the router. Finally, a port forwarding in your router is set up, if you use a different port

for your electrical socket other than the default port 80.
You can now connect the homepage of your socket via the selected domain.

Example: **http://Steckdose-2006.dyndns.org:65000/**

## 1.11 Technical Data

- Connections: 1 x Ethernet connection (RJ45), 3 x load current connections, 1 x mains current connection
- Power supply: 230 VAC
- Power consumption: 2,5 W
- Switching capacity: per Electrical Socket 3600 W, the maximum of 3600 W for all three sockets must not be exceeded
- Network connection: 10/100 Mbps, WLAN up to 150 Mbps
- Protocols TCP/IP
- Working temperature: 0°C - 40°C
- Operating Humidity: 10% - 85% (non-condensing)
- WLAN transmission standard: 802.11b/g/n, WEP,WPA, WPA2 encoding
- Length: 482 mm
- Width: 74 mm
- Height: 45 mm

## 1.12 System Requirements

The homepage was tested on the browsers *Internet Explorer 7.0, 8.0 und Firefox 3.6.16* . For the display of the homepage Java Script needs to be activated in your browser.

# 2 Safety Information

Please consider when putting up, connecting and operating the socket the following hints:

- Put the device on a non-slip mat
- Lay the connections accident-proof
- Do not put the device close to sources of heat, in direct sun light, or close to electrical devices
- Protect the device from wetness, dust, aggressive liquids, and steam
- Connect only to authorized user
- Research has proven that in some cases medical devices can be influenced by wireless signals. For that reason please observe the regulations of medical facilities before using the web-electrical-socket within these facilities.
- Never open this device by yourself, never touch the socket with lacy and metal objects and never carry the device at the connection-cord.
- Never use the device in wet rooms (e.g. bathroom) or in explosion-prone areas
- Do not use the provided temperature sensor in liquids

# 3 Safety Statement

For any damage or harm that is the result of disregarding this instruction manual, the warranty claim expires. For consequential damage we do not assume liability.

- We do not assume liability for any material and personal damage that is the result of inappropriate operating or disregarding the safety information.
- For security and authorization reason it is not allowed to convert or change the device arbitrarily.
- Please consider the security information and instructional devices for the connected devices.
- Please consider the security information of the individual chapters of this manual instructions.
- Do not let the packing materials laying around carelessly, they could become a dangerous toy for your children.
- The electrical installations and equipment's in industrial facilities must be observed by the security regulations and insurance institutions.
- If you are not aware of a correct connections or may there be any question that have not been answered in the user guide, please contact us!

# 4 Return of old devices

If the control of a socket board with temperature monitoring becomes worn out, please bring your worn out device to the community recycling center (e.g. recycling depot). The worn out device needs to be disposed separately from your household rubbish. According to the electric and electronic device law the owner of an old device is lawfully upheld to dispose old electric and electronic devices separately from the household rubbish. Please assist and contribute your share to environmental protection by not disposing your old devices in the household trash.

# 5 DOC – Declaration of Conformity

The company

| | |
|---|---|
| Wöhlke EDV-Beratung GmbH | |
| Grützmacher Str. 4 | D-28844 Weyhe |
| Tel: +49-421-802791-0 | Fax: +49-421-802791-18 |
| info@woehlke-edv.de | www.woehlke-edv.de |

declares hereby that the product

| |
|---|
| Web-Controlled electrical socket with temperature monitoring via the internet |

agrees with the clauses of the following EU-guidelines

| | |
|---|---|
| 2004/108/EG | Electromagnetic compatibility |
| 2006/95/EG | low-voltage directive |

and the following norms were applied

| | |
|---|---|
| EN 55022:2010/AC:2011 | Establishment of information technology: Radio interference properties, limiting values, measurement method |
| EN 55024:2010 | Establishment of information technology: Interference immunity properties, limiting values, testing procedure |
| EN 61000-3-2:2006 | Electromagnetic compatibility<br>Part 3-2: Limiting values for harmonic currents |
| EN 60950:2006 | Security of facilities of the information technology |

Weyhe, April 23, 2013

Prof. Dr.-Eng. W. Wöhlke, Business Executive